
Can / Am EMTP News

Voice of the Canadian / American EMTP User Group

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News from Outside USA & Canada

Effectiveness of the American boycott of Iran and several other countries has been questioned more than once (e.g., see the April, 2002, issue). Well, November 8th, your Editor received more evidence that modern ATP is available within Iran. This time, the inquiry was sent by a "student at Ferdowsi University of Mashhad, Iran," and it concerned the CIGRE load model. Specifically, "parameters A, B and C aren't identified." For background

of this, see the 11th subcase of DCNEW-21, which includes the date 17 Dec 1997. So, the ATP version being used is relatively recent, and could not possibly have been supplied by LEC prior to its closure in 1993. About advice, your Editor truthfully denied all knowledge two days later : *"Presumably anyone who works with real HFS studies would know about the CIGRE model. I certainly am no such regular user. I just took Gabor's formulas and implemented them. If you want expert advice, I know no one here at BPA who could provide it. Sorry."*

A possible user group for the Middle East last was written about in the October, 2002, issue. On October 17th, the subject was raised once again. E-mail having *"Subject: Very Important"* was received *"From: Ahmed Khalifa ..."* who described himself as a *"a student at (HTI) Higher Technological Institute in Egypt."* No ordinary student, it seems this person is *"acting now as chairman of IEEE student branch region 8, & chairman of ACM student branch."* Following an explanation of how important ATP is in Egypt, this proposal was made : *"After discussion with some of the professors representing Egyptian universities, I found it's time to make a user group in Egypt (the capital of Middle East and representing all the African countries)."* Your Editor responded somewhat skeptically : *"Egypt is both a part of Africa and at the center of the Arab World. Egypt also might be the most populous country in the Middle East. But I doubt whether Egypt has as many ATP users as another country in Africa. Can you imagine what that country is? At least one African country probably has no interest in your initiative."* Mr. Khalifa had asked how to form an ATP user group. Your Editor responded : *"It is curious that you want a user group for your country and/or region yet you do not mention previous discussion of the issue. Are you not aware that the subject already has been addressed using two different forums for ATP users? These are ... I would suggest that you begin where the preceding discussion ended."* About the location of HTI,

your Editor concluded his response with this observation : *"I can not recall previous ATP contact with either your school or anyone in Ismalia. I do not recall the names. I am beginning to wonder whether anyone in either of these places is ATP-licensed. The price (free) is right, you know. A local user group is not required to have access to ATP. In any case, it is inconceivable to me that we would negotiate about a user group with someone who is not already ATP-licensed, and something of an ATP expert. We are interested in solving ATP problems, not creating more of them."* No reply thus far.

Australia might host a European user group meeting? This was the bold proposal from Dr. Keith Walshe, who heads the group of ATP users in Australia and New Zealand. Dr. Walshe, who operates Power Quality Technologies from suburban Sydney, New South Wales, first informed your Editor of his proposal in E-mail dated December 7th. Of course, being in the southern hemisphere, an October or November meeting would occur during the spring. Your Editor's reaction the following day involved skeptical admiration : *"My immediate reaction is that EEUG is expected to have its meetings in Europe. But then I think about IEEE, which once held all of its meetings in the USA, but more recently has held meetings in Asia and Europe as well as Mexico. Also, there is IPST, which was supposed to have meetings in Europe and the USA, but had hoped to meet in Hong Kong last summer. No question, others are thinking bigger than I would."*

An EMTP workshop in Seoul, South Korea, during February, was the proposal of Chul-Hwan Kim, Chairman of the South Korean user group KEUG and a Prof. at Sung Kyun Kwan University. This news was received near the end of a long communication, in MS Word format, which was attached to E-mail dated January 2nd. No minor undertaking, the proposed offering is to involve prestigious foreign participation. It is your Editor's understanding that Profs. Akihiro Ametani in Japan, Mustafa Kizilcay in Germany, and Laszlo Prikler in Hungary all have been invited, and all have accepted. Look for summary of the event in the next (July) issue.

More about the Internet and E-mail

Plaxo is the name of software that might automate the updating of E-mail address books, it would seem. Your Editor first was informed of the name in E-mail from Francis Low, the Manager of Metro Trading & Engineering in Ipoh, Perak, Malaysia. Dated September 9th, this message explained that Plaxo makes the updating of address books simple *"by sending messages like this one -- and, if you download Plaxo too, you and I will automatically have each other's latest contact info right inside Outlook or Outlook Express without needing to send emails back and forth. You can get Plaxo at www.plaxo.com/downloads."* There also seems to be a half-Plaxo alternative for persons who do not want to acquire and use Plaxo. The 3 steps are : *"1) Click REPLY. 2) Check the contact info below - and if it isn't correct - just change it in*

the reply. 3) Send the reply message. If everything looks correct, just reply with 'no changes' in the message body." Your Editor did reply, but personally rather than using either of the Plaxo-requested procedures. He explained : *"Well, we received your information --- the first I can recall involving the name Plaxo. What we do with it, I am unsure. I might write a short paragraph for the newsletter."* About the automated updating : *"I can not imagine that many recipients will do this. But I could be wrong. It will be interesting to learn what some trusted contacts think of the idea."* For the record, a "Reply" using MS Outlook would have been sent to address addrupdate-8590105497-11426242--1020857174-1S@mx.plaxo.com

The Elgordo Sweepstake Lottery in Spain may be the most recent variation of Nigerian 419 fraud (last mentioned in the July, 2003, issue). October 2nd, allegedly from a netscape.net address, Dr. Liu's mailbox at BPA received a message having *"Subject : WINNING NOTIFICATION !"* Allegedly in Madrid, Spain, the authors want details of your bank account, of course. But there is no pressure, and no special appeal to your greed. The pitch is more believable: you have won a Spanish lottery. Curiously, E-mail is only the latest vehicle for a scam that began with real snail mail that was postmarked in Spain. Dr. Liu received one of these letters, too, several weeks earlier, and saved the colorful stamps. Dr. Liu's daughter Kwang-yi provided a good published reference dated January, 2003, after explaining that she had *Googled* the name *Elgordo Sweepstake*. Your Editor may never understand what the noun *Google* means, but he certainly understands meaning of the verb, and has begun using it himself (it is amazing how language evolves). As for the big picture of what Google shows, it would seem that the lottery itself is legitimate whereas notifications of winners who never played the game obviously are not.

"The economics of spam" is the title of a story found at *The Register* with date November 18th. The subtitle is : *"only 50 replies in a million will do."* This is a news story about a very informative paper that summarizes the current problem with junk E-mail. *"SPAM : the current state"* is the title of a 29-page paper by Andrew Leung of Telus Corporation in Canada. Dated August 8th, a 452-Kbyte copy in PDF format was downloaded for study. This is *spam.pdf* Point 2 of the *Introduction* contains this bit of history : *"Spam commonly refers to e-mail because of its popularity ... However, in a more general sense, spam also includes bulk newsgroup articles. As a matter of fact, the word was first used to refer to excessive multiple postings in newsgroup, and then expanded to include junk e-mail."* The fourth point is this: *"Approximately 40% of all e-mail in the Internet is spam, and its volume is growing rapidly."* To substantiate this last claim : *"EarthLink, the No. 3 Internet service provider in US, reported a 500-per-cent increase in spam messages to its customers in the last 18 months."* Your Editor never has liked automated out-of-office replies, and recently has come to understand the problem that they pose for list servers (see discussion in the January, 2003, issue) . But your Editor did not understand previously how valuable such automatic replies

are to spammers. Anyone who uses automatic replies really should think about ramifications. Remember the insight of Gerald Lee (see the April, 2003, issue). Spammers constantly are seeking valid, new mailboxes by trial and error (a so-called *dictionary attack*). Well, from page 7 of the paper : *"Consumers set up auto-reply or out-of-office reply in their e-mail programs, and thus, each reply message is an address confirmation."*

"U.N. group seeks control of Internet" is the title of a story in the *Washington Times* dated November 18th. The first paragraph explains : *"Governments spearheaded by China, Brazil, India, Russia and Saudi Arabia are trying to place the Internet under the control of the United Nations or its member governments, a move that the United States and other developed countries are determined to resist."* Today, it seems to your Editor that nobody controls the Internet. More precisely, each owner of each piece controls that piece according to procedures that are mutually agreed upon by all cooperating owners. Readers are to believe that U.N. control would be better? Be careful of what you wish for! Background of the debate seems typical of U.N. politics. Dissent *"cropped up in preparatory talks for a world summit on the information society to be held from Dec. 10 to 12 in Geneva, with the stated goal of advancing the management and worldwide use of the Internet, especially in poorer nations."*

Hotmail was advertising McAfee anti-virus software on November 23rd. For years, auto-appended advertising of Hotmail was for its owner MS. But E-mail from the list server to moderators had this unusual appendage to a submission from rm02@hotmail.com : *"Has one of the new viruses infected your computer? Find out with a FREE online computer virus scan from McAfee. Take the FreeScan now! <http://clinic.mcafee.com/clinic/ibuy/campaign.asp?cid=3963>"* Your Editor's first thought was that perhaps MS owned McAfee. However, Googling *"Mcafee"* points prominently to either www.nai.com or www.networkassociates.com --- both of which look largely the same. Clicking on the *"About Us"* button of the latter of these reveals : *"headquarters in Santa Clara, Calif., Network Associates, Inc (NYSE: NET) creates best-of-breed computer security solutions ..."* Your Editor notes no mention of either MS or Hotmail. Has Bill G sold advertising space to an independent business? If so, this might be one more step upward in seriousness of appended advertising. Do you suppose that clever avoidance (search for *"Clemson"* in the April, 2002, issue) of Hotmail advertising still works? If so, McAfee should be unhappy.

"Phone firms cut Internet service prices" is the title of an AP story that was found at the CNN Web site. Dated December 6th, this documents another, and an important, aspect of the distinction between cable and high-speed telephone access to the Internet. While cable companies hold their prices high (see Comcast in the July issue), and increase performance (see Comcast in the October issue), some telephone companies may be cutting prices. The story is about SBC, which serves Dallas, Texas. The SBC price of \$26.95 a month is *"far below the average of about \$45 a month charged by cable companies. SBC and other*

phone companies are still playing catch-up with the cable guys, who control about two-thirds of the rapidly growing market for high-speed Internet service. Phone companies are turning to price cutting to close the gap." Maybe the broadband market is splitting based on music and movies? *"Phone companies could wind up charging lower rates to people who use the Internet mostly for browsing and e-mail, while cable companies take the high-end customers who will pay more for quicker downloading of streaming video and other bandwidth-intensive applications. Cable companies have toyed with lower prices too, however. The nation's broadband leader, Comcast Corp., briefly offered a \$19.95 monthly rate in a few markets but decided not to extend the deal this week."* So how big is the American rush to broadband ? *"The major cable and phone companies added more than 2 million new subscribers in the third quarter, raising the total number of broadband households to more than 22 million. Meanwhile, The Yankee Group estimates there will be 51.5 million dial-up households at the end of December, down from 54.5 million a year ago."*

MegaMail is the name of the latest option that United Online seems to have devised to separate Juno users from their money. Junk E-mail (spam) dated December 10th had *"Subject : Announcing Juno MegaMail."* More storage space and mail filtering seem to be the claimed advantages. The cost is small : *"Now you can have more space to store photos from friends and family. Send out bigger e-mail attachments. Block unwanted e-mail from ever reaching your Inbox. All for only 83 cents per month! ... with a total of 25 MB of e-mail storage ... Send bigger files with outgoing messages - up to 5 MB of files can be attached. Keep unwanted e-mail out of your Inbox and make sure messages from your Contacts arrive safely with up to 250 addresses in each of your Block and Safe Lists. Sort and manage your e-mail more efficiently with a total of 50 Mail Assistants."* Alternatively, even more storage for even more money : *"100 MB of e-mail storage - all for only \$1.25 more per month."*

One-stop shopping for broadband is the promise of a link from the MSN home page www.msn.com as tested December 12th. The link was entitled : *"High-speed 'Net access from \$1/day."* This led to a page having title: *"Welcome to the MSN high-speed marketplace."* In theory, the concept is attractive : *"Find great deals on high-speed Internet access in your area. Get Cable, DSL, or Satellite! Plans as low as \$26.95* per month! Most plans don't require a contract!"* Whether MS does anything more than collect a commission for this advertising is not known. In addition to the MS copyright at the bottom, your Editor sees the name *"2003 GetConnected, Inc."* Anyway, is the service worth using? Is it reliable? Note that asterisk on the price. A footnote provides the bad news : *"*Prices may vary by service area."* Your Editor concludes that, somewhere in the country, under some conditions, broadband once might have been priced under \$27/month. But here and now? Supplying a nearby address and refusing to supply a telephone number resulted in Comcast being the cheapest offer at \$43/month (presumably before taxes, which are considerable). Satellite was the only

alternative shown, and it was expensive : Direcway for \$60 per month.

Digital cameras already outsell film cameras. Recall how hopes of Kodak were described in the October, 2000, issue. Then, the company had hoped that digital imaging would account for 50% of its business by 2005. The problem is, well before year 2005, half already is not enough for dominance. The balance already has shifted in favor of digital alternatives as documented in a *New York Times* story dated December 25th. Sympathetic to film users, this piece is entitled : *"They'll stick with film, thank you."* But *"sales of digital cameras surpassed those of film cameras for the first time last year ... Infotrends ... estimates that digital camera sales in the United States will amount to 14.3 million units this year, compared with 11 million film cameras (not including single-use cameras). Next year, digital camera sales are expected to reach 17.8 million while film camera sales drop to 9 million units."*

U.S. law finally prohibits some spam as reported by various news outlets on December 17th. The influential *New York Times* provided details under a neutral headline: *"Bush signs law placing curbs on bulk commercial e-mail."* The opening sentence documented the urgency : *"junk commercial e-mail, or spam, ... now accounts for more than half of all e-mail traffic."* But what precisely does the law ban? This is where the disagreement begins: *"The law, which takes effect on Jan. 1, will ban the sending of bulk commercial e-mail using false identities and misleading subject lines. It will also require all commercial e-mail messages to include a valid postal address and give recipients the opportunity to opt out of receiving more messages. E-mail messages with adult or pornographic content will have to be labeled in a manner determined by the Federal Trade Commission, which is also authorized to study the feasibility of a 'do not spam' list that would be similar to the 'do not call' list for telemarketers."* As for a name, the new law *"is being called the Can Spam Act"* (a pun involving Hormel as mentioned in the January issue). So, another law. We should be impressed? All politicians involved were busy congratulating themselves, of course. But is this really progress? How does this federal law compare with existing state laws, and emerging European law? *"Critics say the law, a result of compromise after years of Congressional stalemate, places the interests of businesses above those of consumers. They say it is flawed because it establishes a set of legal loopholes and preempts stricter state laws like the one passed by California this fall, which requires marketers to get consumers' permission before sending e-mail. The European Union has directed its member countries to adopt permission-based e-mail policies. Britain approved such a law last week."* Certainly theoretical punishment is severe enough : *"Violators will be liable for up to \$250 per e-mail violation, up to a cap of \$2 million ... Violators could also face up to five years in prison."* For its account, the *Washington Post* selected a less-sanguine title : *"Anti-spam act signed but some are skeptical."* About current volume: *"During the 15 minutes it took to conduct a signing ceremony in the Oval Office, an estimated 99.8 million pieces of junk e-mail went to in-boxes in the United States and around the world." The*

more conservative *Washington Times* explained why the new law might be considered a victory for spammers. One critic is quoted as saying : *"This law does not stop a single spam from being sent. It only makes that spam slightly more truthful ... It also gives a federal stamp of approval for every legitimate marketer in the U.S. to start using unsolicited e-mail as a marketing tool."* But does it really matter that states are prevented from having stricter prohibitions? *"State laws have, for the most part, not been enforced."* This seems to be the American way: pass a law, then fail to enforce it. Why study of the feasibility of a "do not spam" list? The FTC Chairman explained : *"Because most spammers are not legitimate, the attractiveness of a ... registry is in doubt."*

Consignment businesses now support eBay, the Internet auction site. As first mentioned in the April, 1999, issue, eBay had a problem with fraud of either buyers or sellers. But the free market seems to have devised a solution in the form of bricks-and-mortar consignment services. Freedom of the buyer from the mechanical details of using both the Internet and eBay is a dominant attraction. *"Now you can leave the eBay selling to them"* is the title of a *New York Times* story dated December 21st. The picture shows *"the president of Auction Wagon, one business set up specifically to sell merchandise for its customers on eBay."* Of course, the service is far from free : *"The consignment companies charge a commission -- usually around 30 to 35 percent ... The buyer pays the shipping costs. The minimum commission at some of the businesses is \$15 ... And some ... accept products only if they believe that they will fetch at least \$50 at auction."* How big are the new businesses? *"Some have aspirations of becoming national enterprises. Others in the business offer these services on their own from their homes. An estimated 30,000 people do so through eBay's trading assistants program ..."* But a few big players dominate, and are expanding rapidly : *"AuctionDrop has closed nearly 11,000 transactions since opening its first store in March ... QuikDrop ... has signed franchise agreements to open 24 stores in Southern California and 97 throughout the West in the next three years ..."* But where is merchandise kept? It depends : *"Unlike AuctionDrop, which trucks its merchandise to a central processing site, products sold by QuikDrop are shipped directly from each store. Both companies usually accept objects only if they are of the size and weight that can be shipped by United Parcel Service, although QuikDrop makes exceptions for automobiles and other large equipment."* Yes cars, such as one once owned by the new California governor (see the January issue), who apparently needed to improve his image prior to the election: *"Last summer, the QuikDrop store in Huntington Beach, Calif., sold a Hummer that once belonged to Arnold Schwarzenegger ... for \$70,000."* The eBay commission remains small (i.e., the Internet marketplace is efficient) : *"EBay charges 5.25 percent on the first \$25 ... and 1.5 percent on any amount over \$1,000."*

"This is the year the Internet officially stopped being fun." Thus began Rob Pegoraro's final Sunday column of year 2003, which was published in the *Washington Post* on December 28th. *"The festering problems of spam, spyware,*

viruses, worms and pop-ups boiled over, making the online experience merely annoying at best, financially and emotionally destructive at worst." Yet, this description largely applies to MS Windows users. Also, there are some free remedies : *"Mac and Linux users missed out on all the 'fun.' ... Sick of spyware? Download AdAware (www.lavasoftusa.com) or Spybot Search and Destroy (www.spybot.info). Need a firewall? Download the free ZoneAlarm (www.zonelabs.com). Tired of pop-up ads? Install the Google Toolbar add-on for Internet Explorer -- or switch to such competing browsers as Mozilla and Mozilla Firebird, which block pop-ups and offer tabbed browsing, possibly the greatest advance in Web software since the bookmarks menu."* Note that none of these recommended cures comes from Bill G's factory. As for spam, *"no developer has found a bulletproof solution ... the best defense against spam remains keeping your e-mail address as obscure as possible."*

News About TACS and MODELS

Large MODELS data of Steve Völler in Germany was mentioned in the January issue. As part of pre-publication review dated November 28th, Orlando Hevia provided additional detail : *"He is using a long table for the MODELS pointlist function. The simulation uses a time step of 0.0001 seconds, and the TMAX is 3600.0 seconds. Yes, 36 million of steps. He overflowed a lot of dimensions of ATP, and his last run time was 90 hours. I have no idea what he is simulating."* So, another user who is bothered by slow MODELS simulation in spite of modern (faster) PCs. Although clock speed is not known, Mr. Völler's PC certainly is well-endowed (512 MBytes of memory were mentioned by Mr. Hevia).

TXT256 and TXT2PL are the names of two new ATP data-processing utility programs from Orlando Hevia of UTN in Santa Fe, Argentina. In list server E-mail dated December 10th, he documented the functions and announced availability from secure storage on the Internet : *"TXT256.EXE : Converts two columns of data to a point-by-point, nonlinear device Type 56 of TACS. The program adds the 9999. at the end of the data as required by TACS. ... TXT2PL.EXE: Converts two column of data to a pointlist function of MODELS. The program adds the parenthesis and comma as required by MODELS. ... Both programs delete redundant pairs."* Now, the reader might ask why programs are needed for such simple conversions. Size of the data might be one good reason. Illustrative data file rv_1.txt is described as *"a sample with 20101 pairs of (t,y) values."* Needless to say, no one would process 20K points by hand. Also, there might be a huge saving from that elimination of redundancy. There was a continuation on January 16th, when Mr. Hevia announced : *"Subject: RVO program update."* The attached text explained that RVO is a *"program to filter data and delete redundant values. It formats the output as POINTLIST tables for MODELS usage ..."* Illustrative input and output were shown.

The acronym SoC stands for *System on a Chip* according to E-mail from Prof. Chul-Hwan Kim at Sung Kyun Kwan University in South Korea dated January 2nd. Not known previously by your Editor is this detail : the South Korean user group KEUG now is led by a relay expert. Prof. Kim wrote : *"By using MODELS, the various relay models such as the distance relay model, current differential relay model, directional comparison relay model, out-of-step relay model, power swing relay model, auto-reclosing relay model, etc., can be implemented flexibly."* Your Editor did not disagree in principle : *"I agree, if data for the relay can be obtained. But can it in most cases of practical interest? For example, for a digital relay, what one really wants is the program that is run within the relay. But this is secret (or was, the last time I checked). A manufacturer would have his own program, of course, but a customer would not."* But what about possible dedicated hardware for implementation? Prof. Kim wrote that *"some specific algorithms can be implemented on a chip (integrated circuit). It is called the SoC."* Needless to say, your Editor does not understand details. But he does sense the dawn of a whole new dimension for ATP secrets. Prof. Kim wrote : *"I have implemented some relaying algorithm with MODELS. I would call it AoM (Algorithm on MODELS). AoM has a lot of precious relay algorithms. Until now, I have registered or applied for international (six) and domestic (twenty) patents using these AoM. I am an inventor and my university's president is a rightful person of my patents."*

Line and Cable Constants

Use of 3-dimensional surface graphs in MS Excel first was suggested by Ashok Parsotam of Vector Ltd. in Auckland, New Zealand. Following his pre-publication review of a draft of the January newsletter, Mr. Parsotam asked in E-mail dated November 26th : *"Why are you limiting number of columns of a matrix to 132 characters per row? In this day and age, the limit would be around 256 columns, each column 256 characters wide. This limit fits in with maximum number of columns in Excel spreadsheet. I guess same applies to other spreadsheet software too. However, question remains how do we see contents of your matrix or how to print such large number of columns using a simple text editors. Seeing data and printing spreadsheet with such large number of columns and rows is not a problem. Normally, I convert such large matrix into a 3D surface graph in Excel to quickly review results for any abnormalities. Picture is better than numbers when it comes to large matrices. The spreadsheet in the attached zip file shows this concept."*

The 131-byte limit on output to the .LIS file is a separate issue because plotting is not necessarily involved. Yes, Mr. Parsotam is plotting, but others might want to find eigenvalues, etc. Your Editor was slow to grasp the essence of the request, and for this reason he did not respond quickly. Quoting from E-mail to Mr. Parsotam dated December 11th : *"At first I procrastinated because I*

did not understand the need. Then yesterday Tsu-huei and I talked it over. I believe now I understand. Tsu-huei mentioned pasting matrices into WP, and immediately I thought of MATLAB input of widexx .PL4 files. Yes, why not the same capability for CP matrices? We agree with the concept. ... the widexx limit presently is 2550 bytes. If we expand beyond 131, it will be at least this far, and maybe a lot farther. We are convinced of the desirability, although the format remains unclear. We just do not do enough of such work to know the demands of other software such as MATLAB."

Your Editor and BPA's Dr. Tsu-huei Liu agreed with Mr. Parsotam on several important principles of CP output that are designed to permit easier postprocessing by other programs. This includes 3-dimensional plotting using MS Excel. The principles are :

PR-1) There is to be separate, additional output of CP matrices. Automatically, this will circumvent the 131-byte limit of .LIS files. An analogy could be made to .PL4 files, which provide for separate output of signals that are generated by simulation of the dT loop. If separate output was good for dT-loop signals, why not extend the concept to Prof. Ametani's matrices?

PR-2) Matrix output is to be selective, as has been the case for LINE CONSTANTS (LC) since year one. For small matrices (low order), the output of all matrices was convenient. But as order has increased, control of the volume has become important. Recall Mr. Parsotam's 151 rows and columns (see mention of LISTSIZE.151 in the October, 2002, newsletter).

PR-3) New coordinates might be required. Matrices generally are complex, and rectangular coordinates now are used exclusively for output. Some users may desire or require polar coordinates. A common application might be the plotting of magnitudes.

PR-4) Compatibility with MS Excel, used by Mr. Parsotam, should be ensured because of its wide availability. However, more expensive and sophisticated postprocessing alternatives such as MATLAB (from The Math Works) or MathCAD (from MathSoft) also should be considered.

PR-5) Free alternatives are of interest. Recall that the program *Octave* as recommended by Tom Short when he was at Power Technologies (PTI) employee. This was summarized in the July, 1995, newsletter. *Octave* then was described as "a good alternative to Matlab ... It is great for post-processing of ATP output." It is hoped that such free alternatives to MS still exist, and could be made compatible with the new output.

Mechanical improvements to CABLE CONSTANTS (CC) and CABLE PARAMETERS (CP) were mentioned at the end of the story in the preceding issue. BPA's Dr. Tsu-huei Liu did a lot of good work. The following numbered summary of 7 paragraphs was written from her notes after the work was completed :

CP1) CBSIKM is the CP routine that evaluates Bessel functions, and it is called from 11 different places. The number of arguments could be reduced by two (from 6 to 4) after recognition that fixed-length interface vectors BIN and BKN more conveniently could be communicated using COMMON (the deck named LABL27 is their new home). The remaining 4 arguments of CALL statements have consistently been made variables (previously, integer constants were used for 2 of them). Although this is not objectionable for any of the compilers presently being used, constant integer arguments have been a problem historically due to a possible mismatch of 16- and 32-bit alternatives. As new compilers with a 64-bit alternative are about to be considered (see mention of Stu Cook's work with Apple Macintosh G5 elsewhere in this issue), it is prudent to eliminate the possibility of such mismatch. Variable arguments guarantee a match. Another aspect of CBSIKM was curious : SKIN, which is a CP routine, had been using CALL BSIKM where BSIKM is the CC version of the same code. So CALL BSIKM was changed to CALL CBSIKM within SKIN of CP. Rather than two different routines that do basically the same thing, now just one (the one belonging to CP) is being used. Work associated with CBSIKM was completed November 12th.

CP2) Output such as the following from DCNEW-29 documents the geometry of CP data after the user's input data cards have been read and digested :

```
3 -phase SC cable with 6 conductors. 3 gr ...
Phase 1 Boundary radii ...
Distance from Earth surface ; 1 1.0350 ...
```

Such output sometimes was redundant. It was being produced after each frequency card even though geometry remained the same. So, for the 2nd or later frequency card corresponding to any particular geometry, such output has been suppressed. This shortened the output of DCNEW-29 a little. To be continued.

Tom Short Proposes to GPL ATP

Tom Short, formerly a creative ATP user at PTI (Power Technologies in Schenectady, New York), has been heard from after years elsewhere. Readers may recall that Mr. Short once recommended freeware *Octave* as an alternative to expensive and commercial MATLAB (see the July, 1995, issue). Tom Short has a history of liking freeware. Well, on February 24th, BPA received E-mail having "Subject : Proposal to GPL the ATP." The message came from Tshort@epri-peac.com and it proposed the following (reproduced in its entirety in this and the next issue) :

"Please consider the following proposal for ATP. If appropriate, please pass it on to the ATP users list for discussion.

I suggest that the ATP community realize its victory and move on. ATP is no longer "alternative"; it is the leader among power-system transient programs. Given that, I suggest that the ATP community move to an open-source license, specifically the GNU General Public License (GPL). The GPL ensures that derivative works remain as

open and free as the original work. If the BPA M39 EMTP were GPL'd, the whole EPRI/DCG fiasco could never have happened (the DCG could not have turned a GPL'd EMTP into a for-license commercial program).

I'm writing as an outsider with a biased agenda. I work for EPRI PEAC (since 2000), a for-profit consulting company in the EPRI Family of Companies. Given that, I am ineligible for an ATP license. My main objective is to be able to offer ATP-related services to utility clients who need them. I should also point out that these are my personal views, not the views of EPRI PEAC nor of EPRI. I'm just writing as a fan of open-source software and as a fan of ATP (from my days of use at Power Technologies, Inc.). Given the disclaimers, please consider my proposal on its merits.

Open-source software hasn't really infiltrated the power industry yet, but I think it will. Most of the internet is based on open-source software, from Linux servers, to the Apache web server, to many of the mail servicing programs. There's also a wide variety of open-source software for engineering and science use. A couple of my favorites are R (www.r-project.org, a powerful Matlab-style command-line language that has fantastic graphing and statistics capabilities) and Ipe (ipe.comp-geom.org, a little-known technical drawing program). I also highly recommend Quantian (<http://dirk.eddelbuettel.com/quantian.html>), a self-booting Linux CD that's packed with scientific software including R, octave (an open-source matlab clone), maxima (symbolic math manipulations), and several others. Just put the CD in, reboot, and it runs without disturbing your hard disk.

ATP would fit nicely with open-source software. The existing Linux and Mingw versions of ATP are compiled with open-source software.

The GPL is the most popular open-source license, but it isn't the only one. Of the open-source licenses, it provides the most protection against commercial companies hijacking a free program. For more information on various open-source licenses, see <http://www.gnu.org/philosophy/license-list.html> and <http://www.opensource.org/licenses/>

The main advantages of the GPL approach to ATP are :

(*) **LESS ADMINISTRATIVE HASSLE** -- The developers and user's group officers don't have to deal with licensing. With the CanAm User's Group getting > 200 applications per year, administration is only going to get worse with the existing situation. That said, the ATP community should still be vigilant in making sure that the terms of the GPL are not violated (that ATP stays free).

(*) **OPENNESS** -- It would be much easier for professors to use ATP in courses (no licensing to worry about). Everyone can dig into the source. This could lead ATP in new and exciting directions (an ATP directly embedded in ATP-Draw, an octave/atp control-system analysis combo, etc.) Companies like GE, Electrotek, and EPRI PEAC can now become involved with ATP. Also,

licensed users wouldn't have to worry about whether they're giving out ATP secrets (if I send this ATP data input file to a colleague, would that violate ATP secrets?).

(*) **HIGHER QUALITY** -- More testers and debuggers leads to higher quality code. See http://news.com.com/2100-1001-985221.html?tag=fd_top for one analysis of open-source quality.

(*) **FUNDING** -- ATP developers could set up a non-profit foundation. Companies could make tax-deductible contributions to the foundation. Even better, if a company develops code, they can donate the code to the foundation and deduct the development time on the project. For existing examples of such foundations, see : <http://www.apache.org/> or <http://www.python.org/psf/>. I think open-source software is a good way to collaboratively develop software. I could even envision the strange scenario of EPRI funding development of a module for the GPL-ATP.

The main risks I see with the GPL approach are ..." To be continued in the following issue. The story is not short.

Web Surfing & Publishing at Home

Acrobat Reader 5.0 significantly increases those small (0.3 inch) top and bottom margins with which work began. This was Dr. Liu's discovery. Page breaks are consistent but top and bottom margins are not. There could be no doubt as two paper copies of the same page were held side by side. One was printed directly from WP 9 and the other was printed from Acrobat Reader using the PDF copy that was produced by WP 9. Both programs printed to the same printer. This was during the first week of September, when it was noticed that the top margin was extended by more than a full line, and the bottom by at least a full line. How was this possible? The font was shorter! Partly in an effort to reduce this effect, the top margin was doubled to 0.6 inches, increasing the original 99 pages to 101 pages.

The 101 pages for Chapter II should never be exceeded. This is current thinking, anyway. Yes, there might be some expansion (new key words) in the future, but there also should be substantial contraction as soon as CHAP2.WPD has been given to EEUG. For future use by the Can/Am user group, tutorial and illustrative material for frequency scans should be removed. Readers are advised **not** to interpret this as a criticism of the material itself. Rather, the movement will concern appropriate location. This has to do with organization. Theory should be in the Theory Book, and the Rule Book should be limited to an explanation of rules of input data. Examples belong either in standard test cases BENCHMARK DC*.DAT or some publication that treats applications (e.g., "Everything you ever wanted to know about SSR but were afraid to ask."). Limited just to rules of input data, the Rule Book will be huge.

Extraneous bold text was yet another unexpected complication of WP. What was expected was explicit use.

The WP heading includes a small box that enclosed the letter "B" and this can be used to toggle between bold and regular characters for a highlighted range of text. MS Word is essentially the same. This much is clear and simple. More obscure is other bold text that was noticed within the WP tables that are used for data rulers. Some of these, Dr. Liu was able to remove using "Format / Font." Under the "Appearance" tabulation, there is a "Bold" entry that sometimes had been checked, so could be canceled by a mouse click. But for other occasional uses (your Editor already has forgotten which), this did not work. A way to remove the remaining bold text has not yet been found.

Free PDF995 provides Internet-delivered advertising as explained in the October issue. Yet, Orlando Hevia seems to have found a way to bypass this burden. In E-mail dated August 28th, he wrote : *"I printed the manual of gtpplot to pdf with pdf995, without a connection. pdf995 tries to connect to its web site, Opera (the browser I am using) says it cannot find the page, so I close Opera, and then the printing continues without problems."* Amazing.

SpeedBand is the name used by United Online for faster Web surfing via a standard telephone line. *"Get high-speed surfing without the high price!"* is the slogan used to sell it. During the final week of August, your Editor received a junk postcard from Juno that advertised this service for an extra \$5 per month. The attention-catching claim is: *"Surf the web up to 5 times faster."* But there is an asterisk, and this explains that *"SpeedBand does not increase the transmission speed of files or attachments including music or video."* So what is increased, and how? Maybe for \$5 more than the nominal \$10, Juno would give a user priority for its time-sharing? Maybe failure to pay results in an artificial slowdown (remember how Comcast recently doubled its maximum upload speed from 128 to 256 Kbits / sec) ? What reader can imagine a less-sinister explanation? If so, what is it ?

Underlining of a Web address was one oversight that was present in the initial PDF copy of the October newsletter as created, made available, and announced to subscribers of the EEUG list server by Laszlo Prikler on September 16th. No underline was intended, and your Editor had observed : *"The only thing I do not like is that underlining of the EPRI Web location. I imagine somehow WP 10 did this to me."* Laszlo Prikler rapidly responded as follows : *"Yes. Modern wordprocessors convert web addresses keyed by the user into active hyperlinks. This is similar under Word2K. This feature can be switched off under Tools / Autocorrect / Autoformat as you type menu. Unfortunately, my brain capacity was not sufficient to figure out a similar medicine under WP10. WP 'Help' suggests this ... The problem that no Hyperlink(s) exist under the Tools menu in my WP10. Only singular, without (s) and it has not any Environment or General Tabs. So I guess the Help suggests what is still not coded in the program. But there is a less elegant way to remove a hyperlink: Click right mouse over the Hyperlink, select Reveal Codes and delete 'Hyperlink' tag. If document contains an active link -depending on the PostScript driver-, this will be converted into active PDF web link."*

This was not the case with your PS file, because it included only the underlined text. If I want hyperlinks preserved I use PDFWriter rather than Distiller."

Display of Chinese language conflicts with some special characters of WP 9 as observed September 30th. BPA's Dr. Tsu-huei Liu had noticed that the minus sign within the volume number had been converted to a square, and this prompted your Editor to ask why the quotation mark was not being properly displayed. Dr. Liu had an immediate explanation : trial or temporary use of Chinese-language software. Previously, it was known that the software conflicted with accented European languages (e.g., French or German), and that was the reason it was not regularly being used. That there also is a conflict with English of WP seems even more serious. Not good.

Brain - Damaged MS Windows

Longhorn is a future version of MS Windows as first mentioned in the July, 2003, issue. The good news is that Longhorn is cheap. *"Longhorn on sale: only \$1.58"* is the title of a *Wired News* story dated December 1st. Of course, Bill G later will charge more, but *"CDs containing software Microsoft has codenamed Longhorn are on sale for six ringgit (\$1.58) in southern Malaysia. The pirated software is an early version of Longhorn demonstrated and distributed at a conference for Microsoft programmers in Los Angeles in October, a Microsoft attorney said."*

Steve Völler in Germany is mentioned elsewhere in this issue whereas Steve Voeller was mentioned in the preceding issue. The distinction is worth documenting. The story began with an E-mail message. Use of "Save as" of MS Outlook distorts any accented characters of such a message. The problem is comparable to the distortion of MS IE for French language Web pages (see separate story). Of course, this assumes that the original E-mail had the correct accents (not always true). So, when your Editor takes E-mail home for writing of a future newsletter, accented characters suffer. The "oe" was just an approximation using keyboard English characters. But why does Bill G do this to us? The problem can be avoided if the content of an E-mail message is pasted from MS Outlook into a window of freeware pfe, and then if the pfe window is saved to disk. If free pfe can do the job correctly, why can't Bill G?

"For Windows users, 'browser hijacking' is only the latest threat." This is the title of a column by Rob Pegoraro of the *Washington Post*. Dated February 29th, this summarizes the latest nightmare of MS Windows : *"Every other week yet another part of the online world gets a warning label slapped on it -- downloads, e-mail attachments, instant-messaging file transfers and now Web pages themselves. 'Browser hijacking' is as bad as it gets : Like the Blaster worm, this form of trickery can take over your software silently and invisibly. Typically, users discover what has happened only after the actual hijacking: Their Internet Explorer home page and Web searches have been switched to strange sites, a flock of pop-up windows follows them"*

around, their lists of favorite sites have become a catalogue of porn purveyors -- and none of these changes can be undone without tedious debugging. These attacks differ from 'spyware' invasions, which can have similar effects, in that victims never took the conscious step of downloading a program and then running its installer. In some cases, the only mistake a user made was to click an 'OK' button to allow what they thought was a change in home-page settings or an addition of a Web toolbar -- not knowing that the site would do much more than that. ... Often, though, the problem can be attributed to going online with an out-of-date copy of Windows, allowing a hijacker's site to exploit old vulnerabilities to worm its way into the PC. (I've yet to see any reports of Mac or Linux browser hijacks.) "

"EU says Microsoft settlement talks fail." This is the news-breaking headline of a *Washington Post* story dated March 18th. EU indicates the European Union, which has been complaining about, and investigating, MS business practices for years (e.g., see the October, 2000, issue). Heading the European negotiators is "EU Competition Commissioner Mario Monti." Finally, there is failure "to settle a broad antitrust case against the U. S. software company, the two sides announced Thursday. The breakdown clears the way for the EU to make a formal finding of monopolistic abuse against Microsoft ..." So what else is new? MS already has been found guilty of such charges in an American court (search for "guilty" in the January, 2000, issue). Why might this case be more difficult for Bill G? Because the court is European and MS is an American company. MS enjoys less sympathy in Europe than over here. Yet, the lawyering will continue. Do not look for any quick resolution. MS has an interest in delaying whenever, wherever, and however it can, and it has the money to pay lawyers to do this. A *New York Times* story dated March 18th offered this summary conclusion : "Failing to come to an agreement with Mr. Monti is a huge legal setback for Microsoft. ... Rather than resolving the legal uncertainty dogging the company, ... the European antitrust case will become a reference point for future litigation involving antitrust allegations." A primary point of contention seems to be MS Media Player, which is alleged to have an "unfair advantage over competing music and video players like Real Networks' RealOne Player and Apple Computer's QuickTime."

Corrections to This Newsletter

"(EEUG deputy chairman)" is a parenthetical comment that was used correctly in the story about credit cards in the January issue. Harald Wehrend is the Deputy Chairman in Europe, and this comment was about him. But somehow your Editor mistakenly copied and pasted the explanation into the preceding paragraph about Easy ATP Installer from Japan. Reviewers are not responsible for the mistake, it should be noted. The troubled explanation was absent from advance copies. In fact, it was added at the last minute at the suggestion of Laszlo Prikler. This is a weakness of the system that your Editor has adopted : generally, no one else reviews actual last-minute changes. Even review by others

might not have helped as the intended change was made correctly. At the same time, an extraneous, inadvertent change unfortunately was made elsewhere in the document. Might this be another sign of how troubled the coexistence of your Editor and WP is? WP continues to be used, but is not much liked.

Confused phrasing of a sentence was illustrated perfectly on the home page of the *Washington Post* early in the morning of December 18th. The dominant color picture of the day was from urban Iraq, and it showed several natives gazing at newspapers that had been displayed for sale by a street vendor. The caption below the picture was this : "Iraqis read Monday's news about Saddam Hussein's capture at a Baghdad newsstand. (AP)" How long this defective labeling was used, your Editor does not know. The page states "Updated 6:30 a.m. ET" which would be 03:30 a.m. Pacific Time, and your Editor observed the problem within a minute or two of 03:46 Pacific time. If phrasing of any newsletter ever might be this troubled when first composed, existing review procedures should lead to recognition and correction prior to publication. This is an obvious advantage that your Editor has: plenty of time to double and triple check all writing. Typically a handful of other individuals also have a week or more to report any errors that they might observe during their pre-publication review. News may be stale (see the January, 2003, issue), but at least it should have been carefully reviewed prior to publication. A real-time news service such as the *Post* sometimes can not afford this luxury, it would seem.

Remote Education Using ATP

Remote (i. e., off - campus) education is a recent involvement of Prof. Bruce Mork of Michigan Tech in Houghton. In E-mail dated December 8th, Prof. Mork summarized: "We have a new remote MSEE program. I am teaching the first course this semester, in which we have 9 remote students and 7 local students. We have used ATP's line constants and only done some very basic introductory things as this is the lead-in course for their MSEE in Power. EE5200 -- Advanced Power Systems Analysis. Our transients course, EE5220, is scheduled to be delivered later on in the rotation."

It should be explained that MSEE is a graduate degree: the Master of Science in Electrical Engineering. In the American educational system, an MSEE might require a year or two following a normal, 4-year engineering degree (the BS, which indicates Bachelor of Science). A "Details:" paragraph followed the preceding summary. Prof. Mork used this to explain connection to the Internet : "Our new remote MSEE is a course work - only program, with all courses delivered via video streaming. Individuals can directly enter the program on their own, there is no requirement for a corporate site agreement. 30 semester hours beyond a BS are required, as many as 10 credit hours can be taken from other universities and transferred in. Our courses can also be taken by students at other universities and transferred back to their degree programs there. The

URL for upcoming courses, application / registration forms, tuition rates is : <http://www.admin.mtu.edu/disted/msee/msee.php> We are presently constrained, however, to deliver courses only to the NCA (North Central Accreditation) area. This includes many states, but not all ... We would hope to remove this constraint in the near future, to deliver courses anywhere in the US and perhaps also abroad. I will also forward a copy of yesterday's e-mail announcing the spring semester offering."

Recall Prof. Brian Johnson at the University of Idaho. The April, 2000, issue contains a paragraph that summarizes Prof. Johnson's pioneering contribution to remote education that involves ATP. At the time, this seemed revolutionary. But times change, and 4 years is more than a generation for computer technology and the associated recording and distribution of lectures. The Internet revolution continues. Whereas Prof. Johnson seemed to rely on videotaped television and snail mail ("tapes are sent out once a week, in groups of three lectures"), the current MTU offering exploits broadband connection to the Internet. To be continued.

New EEUG List Server

There were 1164 subscribers in 63 or more countries according to E-mail from Laszlo Prikler dated November 25th. In the old days of E-mail inquiry, REVIEW BY COUNTRY was used to obtain such information (see the July, 2000, issue) . Why the "or more" following the mention of 63? Because addresses without an explicit country termination (e.g., .jp for Japan) are counted as American even though this frequently is not the case (think of all of the ieee.org or hotmail.com mailboxes). So the American total is inflated. In any case, here are the top 10 by country, in descending order : 1) USA 562; 2) Japan 90; 3) Spain 40; 4) Brazil 31; 5) Korea 31; 6) Germany 30; 7) Venezuela 30; 8) Australia 27; 9) Italy 25; and 10) Great Britain 19. Elsewhere in this issue, the reader can find mention of Egypt and Africa. South Africa certainly has a respectable total [14] whereas Egypt is at the bottom of the list with a single subscriber, your Editor notes. Also noteworthy are modern changes in Europe. For example, the former Yugoslavia has a significant presence, although via four separate entries: a) Bosnia and Herzegovina (1); b) Croatia/Hrvatska (6); c) Macedonia (1); and d) Serbia (3). Slovenia (mentioned in previous issues) is not seen.

Legal disclaimers that automatically are appended by company lawyers to outgoing E-mail have been mentioned before (e.g., see the October, 2000, issue) . This challenge to list server moderators arose again on January 14th due to a submission by Ralph Folkers of Schweitzer Engineering Laboratories (SEL) in Pullman, Washington. By industry standards, the SEL appendage is not long. It follows : "This e-mail may contain SEL confidential information. The opinions expressed are not necessarily those of SEL. Any unauthorized disclosure, distribution or other use is prohibited. If you received this e-mail in error, please notify the sender, permanently delete it, and destroy any printout. Thank you." Later that same day, as part of discussion

among moderators, Laszlo Prikler noted a difference from other such messages: "This is not a typical one and I tend to approve the message together with this notice. ... This message from Ralph did not contain confidential information and our subscribers receive this writing with a good reason, not an error. So this type of legal notice is OK for me. What do you think about it?" The following day, your Editor agreed about the difference, but was not sympathetic : "Company lawyers have, by means of the message, warned us against disclosure of the information if we are not the intended recipient. This is done to make it easier for them to collect damages (money) in case a mistake is made. This is no academic matter for Schweitzer, I would point out. A Schweitzer secret that could bankrupt all of us is the algorithm (computer program) that is used within a SEL relay. From Bob Wilson's contact 10 or 12 years ago, we know that the program is top secret. Question : how do we know that we are the intended recipient? If the message were addressed to 'all 1200 or so subscribers of the EEUG list server,' I agree there would be reduced danger in publication. But how many messages are addressed this clearly? Almost none. It seems to me that doubt almost always will remain, so EEUG publication almost always would involve some potential risk." Moderation itself might be a potential liability in this respect. Your Editor would make the analogy of shoveling snow from one's sidewalk during the winter. For decades, it has been known that shoveling of snow carries legal liability (even though it is required by the laws of most northern American cities). Might moderation be similar? Your Editor wrote : "Just out of curiosity, how does Power Globe handle the problem? Or does Power Globe avoid the problem because it continues to avoid moderation? I.e., in this case, it is the subscriber himself who shoots himself in the foot (as opposed to a moderator who might make a mistake)."

"Power Globe proposal for ATP Forum" was the "Subject:" of E-mail from the EEUG list server dated February 25th. Yes, this is the same E-mail service as mentioned in the October, 1996, issue, which mentioned continuing problems of the "power-globe mailer of Purdue and Carnegie-Mellon Universities." The E-mail author was Dr. Keith Walshe in Ultimo (suburban Sydney), Australia. Apparently a Power Globe subscriber, Dr. Walshe, the Australian user group chairman, called to the attention of ATP users a Power Globe announcement by Tom Field. Dated February 25th, this proposed an alternative to the EEUG list server for ATP-related discussion : "... since people appear to want to use another method of communications which may be less developer oriented and more user oriented, a question has been put to the users of the IEEE Power & Energy Virtual Community about providing a place for instantaneous communications on ATP as well as file sharing." Not only was an alternative forum proposed, there was an ongoing election, it would seem : "Please visit the IEEE Power & Energy Virtual Community, read the post ... and cast your vote to the 3 questions. ... This vote will be open until April 5. A decision will be made on that date and posted on the Power Globe list-server if the desire is to have such a section." Dr. Walshe was concerned, and not sympathetic to the idea : "This proposal of Tom Field is, I am sure, well motivated. But it never the

less is unsound, and must be rejected. The present ATP List Server is open to all licensed Users of ATP & in fact you cannot be included on the list unless your local User Group Secretary places your name there. It could thus be concluded that anybody who has to post to Power Globe is not licensed, and that this proposal would actually serve to circumvent the ATP licence system. ... The only people who can verify ATP licence status are the User Group secretaries and as one of them I do not want a stream of requests to validate a licence when the existing system works perfectly. Neither would I consider releasing the User database to any third party. Even putting the above aside, it is a bad idea to fragment the discussion of worthwhile EMTP related application topics. One of the things that characterised the original ATP server ... was a large number of questions from students who were clearly not being adequately supervised. It would be quite regressive if that situation was recreated. ... I urge all ATP users to reject this proposal." To be continued.

Ametani and Nagaoka Visit BPA

This is a continuation of writing about the September 26th visit of BPA by Profs. Akihiro Ametani and Naoto Nagaoka of Doshisha University in Kyoto, Japan.

The October newsletter provides a decent illustration of the HTML capability of WP 10. File size is reasonable enough as the output of DIR OCTOBER.* shows :

OCTOBER	WPD	217,039	09-21-03
OCTOBER	TXT	127,236	09-18-03
OCTOBER	HTM	194,366	10-01-03

At least the HTML output is smaller than the WP 10 storage (certainly not the case for that PDF output of free PDF995 as mentioned in the October issue). Even for commercial Adobe Distiller, PDF sizes were larger (see mention of 158 and 230 Kbytes in the July, 2003, issue). Furthermore, unlike modern PDF, the .HTM file is not compressed. Applying PKZIP to the preceding 3 files gains 67%, 60%, and 72%, respectively. Conclusion: size of the HTML output of WP 10 is attractive.

But is appearance satisfactory? Again consider the WP 10-produced HTML output of the October newsletter. After displaying OCTOBER.HTM within MS IE (i.e., Internet Explorer), your Editor made the following 11 observations as he scrolled the 20 pages by on the screen : OB-1) The 2-column structure has been lost; output is single-column, and it nearly covers the full width of the screen. There is no zoom (variable magnification). But why does Bill G provide no zoom (can a reader imagine a simpler or more obvious feature) ? OB-2) Page breaks have been lost. Output is continuous from beginning to end. OB-3) Page numbers on the right of the Table of Contents are not aligned vertically. Yet, they were not aligned in the DOS text ("Text out" as stored in the .TXT file), either. Neither were they aligned in text output when MS Word 7 was being used (July and before). It would seem that a table of contents is a difficult structure to translate. OB-4) Right and left margins are justified properly (note: for WP 9, only the left margin was

justified). OB-5) An inadvertent <CR> in the .WPD file (two were noted) is easily detected since it results in a broken line (as it should). Your Editor finally has found an easy way to locate these. OB-6) Indentation at the start of each paragraph is observed (using WP 9, it was not). OB-7) Italics, bold, and font size seem believable, but the supposedly fixed-width Courier font that is used in places does not line up properly. It looks closer to being fixed than the usual proportional Times Roman text, but it is not nearly perfect. The right edge may be mis-aligned by 3 or 4 bytes. Why? OB-8) Superscripts appear normal (recall that free PDF995 had mishandled these). OB-9) Text is white on a dark-brown background. This apparently is inherited from Windows (Both Notepad and WP 10 use the same colors). Your Editor finally has discovered a way to avoid the eye-tiring white background of PDF as displayed by Adobe Acrobat Reader. OB-10) The story title "*Rotating Machinery Modeling*" seems to have a fixed (Courier-like) font whereas within WP 10 it does not. This one exception is not consistent. OB-11) Failure to return to a proportional font (Times Roman) following table-like rows is noted beginning with "*This expansion is ...*" Summary evaluation: HTML output of WP 10 is interesting and useful, but not yet ready to replace PDF for ATP-related publication.

Books that teach Java are numerous. The market must be huge, and details change rapidly. Some 20 feet from Dr. Liu's cubicle is a storage corner that serves as a library and depository for many such no-longer-used works. Two have been consulted by your Editor. The first is from Sun, and it is old. It is of historical interest : "*Hooked on Java*" by Arthur van Hoff, Sami Shaio, and Orca Starbuck who are "*members of the Java development team*". About efficiency, this 1996 book states the following at the bottom of page 14 : "*Java is a lot more efficient than typical scripting languages, but it is about 20 times slower than C. This, however, is acceptable for most applications.*" Why does this prompt your Editor to think of Laurent Dube (see "*MODELS might be slow by a factor of 50*" in the April, 1997, issue)? Yet, your Editor does read hope for Java improvement : "*In the near future code generators will be available that will make java programs nearly as fast as programs written in C or C++.*" A second noteworthy book is the much thicker (more than 1000 pages) "*Thinking in Java*" by Bruce Eckel. Computer-stored copies of earlier versions as well as the author's preceding "*Thinking in C++*" can be downloaded free of charge from numerous sites on the Internet. Begin at www.bruceeckel.com for a list of mirrors scattered around the world. Finally, there is a "*for dummies*" book available from IDG (recall mention in the April, 1996, issue). This has title "*Java programming for dummies.*" Dated 1996, the characteristic yellow and black cover states: "*25 million Dummies Books in print.*" Chapter 18 is entitled "*Java Stands Alone.*" This seems to support Prof. Nagaoka's choice of Java for the programming language of emtped : "*Java is a programming language that can make secure, portable, platform-independent, multithreaded, and stand-alone applications.*" The authors conclude their "*Java is easy to understand*" subsection with this conclusion: "... believe me: Java is easier to learn than C++" Your Editor is impressed.

Monte Carlo (STATISTICS)

Tuning seems to have pushed the PowerPC cluster decisively past that Intel cluster at Livermore : "*G5 cluster secures elite spot for Apple, IBM*" is the title of a story found at *The Register* with date November 4th : "*The cluster ... has reached 10.28 teraflops ... the Big Mac cluster is all but assured third place.*" About advertising value to Apple : "*Apple has been chided in recent years for falling behind Intel and AMD in PC processor performance. But its new relationship with IBM to use the Power PC 970 – aka G5 – processor has vaulted Apple to superstar status in the technical computing realm.*" The story also mentions a less intrusive alternative that seems to have been named Green Destiny : "*Researchers at Los Alamos National Lab have been working on supercomputer class systems that can fit in an average-size closet and operate without special cooling systems.*" Sounds good. Your Editor seems not to have been the only one to have interest in a simpler and quieter alternative to the fans and air conditioning of clusters on the cutting edge.

"*Halt in C-like RUNOUT. Overflow JARRAY(200)*" was the start of a paragraph in the October, 2001, issue. The paragraph must be repeated a little more than two years later. As stated, the 200 had become 300, but this did not much help data from Zhou Pei-hong of Wuhan High Voltage Research Institute in China. The report of trouble and data \wp51\d03*.dat that illustrated the problem was received with E-mail dated November 10th. No, JMARTI modeling of frequency dependent lines (which require dumping of vector SCONST) is not the problem this time. Another completely different possible vulnerability of the modularized dumping and restoring logic used by GNU ATP has been recognized. This is associated with handling vector ZNONL of compensation for nonlinear or time-varying branches. This time, understanding is not at all difficult. Although indexed as a vector, ZNONL stores a set of bus vectors. Each column is a vector of node voltages for a different coupled phase of compensation. Since the number of coupled phases is unlimited, so the demands of Robert Schultz to index data and zero runs of ZNONL might be unlimited. So, the fixed limit of 300 was easily reached. Specifically, List 9 (the number of nonlinear elements) was only 25, but more than half of these were in the same subnetwork (List 24, the maximum number of coupled phases, was 13). The burden of ZNONL on List 29 was 206 cells. Added to the fixed overhead of 112, this reached 318, which exceeded the limit of 300. So, in LISTSIZE.FGH there has been an expansion of List 29 from 300 to 600. The expansion is substantial, but the effect remains small. At a time when total table size is measured in the millions of words, 600 words is nothing. The real or better question is, why waste a valuable list on something so small? The 600 is an experiment. If no one reports trouble during several years, current thinking is that the storage might be made fixed, thereby freeing List 29 for some more important and unpredictable use. Even if expansion later might be found to be necessary, it might be handled in code rather than with data storage. I.e., Schultz's use might be limited. Rather than expand the storage, the

burden of ZNONL could be reduced by a split of the work into 2 or more pieces. A final detail is this: The overflow message in RUNOUT has been improved. Previously, it documented only the storage that has overflowed; it did not reveal how much additional storage would be required. The required value is variable N. If the user must re-dimension List 29, this is valuable information.

MS Windows can provide the networking for OPMC. This is the surprising conclusion of an inquiry about Linux. Dated November 20th, your Editor had sent Orlando Hevia an inquiry having "*Subject : Questions about a Linux cluster.*" Networx had used Linux, and your Editor had wondered : "*Suppose you had 2 or more PCs, and suppose you wanted to network them. Is networking a part of Linux, or would you need to add software to make the connection using Linux?*" Surprisingly, November 20th, Mr. Hevia responded initially, and most encouragingly, about MS Windows : "*I have two PCs, but I connected them using Windows 2000. But only because I know how (after a lot of tests). I have the scanner on my old PC and the printer on my new PC. I can scan to the printer (=photocopy) easily.*" Forgetting about details of the connection (whether or not one has a cluster), the question was simple : could Mr. Hevia perform parallel Monte Carlo simulation using 2 or more computers from a single location (a single PC). "*I have my two PCs connected, and I can share files, devices, and programs ...*" About philosophy of distributed computation, Mr. Hevia mentioned "*SETI (Search for Extraterrestrial Intelligence ... Not the project, but rather the program that the project uses. Unused time of millions of computers around the world is used to process information from radio telescopes.*" In this case, the Internet provides the networking (next level of abstraction).

What hardware is needed? November 21st, Mr. Hevia provided some details of the connection of his two PCs that use MS windows: "*Additional hardware is required: two network cards, 15 \$USA each (or used, at 3 to 5 \$USA), plus the cable (15 \$USA for 12 m to connect two PCs without disturbing the room). Of course, new technology allows wireless connection, but it is too expensive here.*" Recall the mention of Laplink in the January, 2003, issue. Provided Windows is running on both PCs, networking seemed simpler and better to your Editor. Yet, Mr. Hevia also suggested a free alternative to Laplink: "*I used filelink in the old days --- a similar program from Caldera DOS. Filelink is free. I have it, if you want it.*" No, your Editor did not want it, but he did want proof that Mr. Hevia's MS networking did the job for parallel Monte Carlo. Mr. Hevia wrote: "*Win 2K allows the connection via Ethernet cable, using inexpensive hardware. 10 Mbits/second runs without any problem. I tried 100 Mbits/second, too. This worked for file transfers, but caused trouble for the printer, so was abandoned.*" To be continued. The story has just begun.

GNU ATP for Mingw32

Object files for GNU ATP are made available to any licensed ATP user via secure storage on the Internet in

order that users can dimension their own executable versions TPBIG.EXE This point must be made again, and prominently, because some users continue to believe that the user group will supply them with whatever size TPBIG might be needed --- even after being told that this is not the case. Precisely such a request came from a Western European consulting company or manufacturer in E-mail dated March 12th : *"I apply to you again for dimension problem."* Your Editor was blunt in his response : *"Yes, again. I am wondering why. I am wondering what was not understood in my preceding response weeks (months?) ago."* Of course, the latest request was driven by practical need : *"We at XXXX are facing a study which is quite critical for relationship with a client. ..."* While not at all skeptical, your Editor remained unsympathetic : *"You must realize that XXXX business is not of great concern to this user group. Neither is the business of G.E. or ... or any other particular company."* As so often happens, a model must be expanded : *"The first 'improvement' has to be the increase of the 13 span subdivision at least of 100 PI, in order to better reproduce the measurements and observations along this span, + 14 PI of the remaining circuit. ... It is a critical issue, so please, do me a favour ... to create a suitable dimension of WATCOM or GNU-MINGW ..."* Your Editor's reply : *"Well, at least you mention GNU Mingw32. At least you realize it exists. Now I will explain once more why this is important to you. Orlando Hevia in Santa Fe, Argentina, makes available GNU ATP object files for both Linux and Mingw32. This is done in order that any licensed user can produce his own TPBIG, with whatever table sizes he wants, free or charge (the GNU compilers and linkers are free of charge). Others (e.g., Qibin Zhou in Hong Kong, as reported in recent newsletters) do it. Either you or someone else at XXXX could, too. You do not need us to provide you with unusually-sized TPBIG. This is not a service that is offered to the general public by the Can/Am user group."*

Computer Viruses and Worms

Zombie PCs? *"Spammers tap unwitting users' PCs"* is the title of a Reuters story dated December 3rd. Found at the Web site of *Wired News*, this story expands upon the fear of Sobig (see the January issue). The introduction from London summarizes : *"Security experts have identified what they suspect to be the biggest culprit behind that seemingly unceasing torrent of e-mail spam messages and computer virus outbreaks."* It is *"the home user with a broadband connection. In fact, it could be you."* Recall Gabor Furst's close encounter with Bugbear (see the October issue). Rather than forwarding his E-mail, the alien program that took over his PC could just as easily have been sending spam. Had it sent spam, recognition of the infection might have been slower (no angry Prof. Kizilcay to complain personally). As expected, the story mentions MS. Less common but perhaps equally important is the warning about broadband, which may be more of a problem than a solution to congestion of the Internet : *"Viruses and related 'worms' typically target computers that run on Microsoft Windows and have a high-speed,*

always-on connection. In the past six months, a new generation of bug has emerged that contains a so-called Trojan horse program which discreetly installs itself into the innards of the PC. An effective Trojan gives the author near-complete control of a victimized machine -- almost always a computer that is not equipped with proper firewall and security software. The result is that the computer becomes a 'zombie' ready to carry out any nefarious command." How big is the problem? According to a Sophos spokesman, *"almost a third of all spam is being sent from hijacked, innocent computers."* Needless to say, this poses a new challenge for laws that ban spam. Offense always seems to be one step ahead of defense. Also, extortion might be a related challenge. There seems to be a high-tech version of the protection racket : *"British police recently warned that crime syndicates, many in Eastern Europe, are using denial-of-service attacks to blackmail businesses, threatening to knock them offline unless they pay a small fee. These groups are honing their virus-writing skills to build up an army of machines to use at their beck and call, investigators say. For now, sending spam through an affected machine is more common. It is one in a series of new tricks spammers and virus writers have devised to obscure their tracks. Known spammers often are blocked by spam filters, thus making it crucial to mask their identity through a computer user with a clean record."* Not at all a friendly place these days, the Internet.

"Spam flood still rising despite new U.S. law" is the title of a story in the *Washington Times* dated February 7th. This documents the futility of law written by politicians : *"About three-quarters of all e-mail sent in January was spam and nearly two-thirds of that total was sent in a way that makes the new Can-Spam Act difficult to enforce, some e-mail security companies say."* It would seem that spam filtering has become a big business : *"Brightmail, a San Francisco company that filters e-mail for large companies, noted that spam made up a record 60 percent of the 85 billion messages it scanned in January. Analysts estimate that spam, or unsolicited commercial e-mail, costs businesses as much as \$10 billion in services and lost productivity a year."* So why does the FTC (Federal Trade Commission) have trouble enforcing the new law? *"Building a case against a spammer takes time ... because the worst offenders usually create multiple barriers to protect their identities."* There exist *"vulnerabilities in computers known as 'open proxies.' These vulnerabilities, usually created by a computer virus or worm, allow spammers to send mass amounts of unwanted e-mail without being identified."* This sounds like zombie PCs, all right. It also introduces the recent MyDoom *"computer worm. MyDoom, the fastest-spreading worm in history, was programmed to hijack a computer's e-mail address book and send messages to everyone listed there. There are also signs that spammers are moving overseas to avoid the new law."* So perhaps the U.N. should become involved (ha, ha)? About MyDoom, the novel aspect was a target other than Bill G and MS. A Reuters story found at *Wired News* with date February 1st is entitled *"Early worm gets SCO bird."* SCO is the Linux predator; and like MS, SCO is despised by many hackers. The story explains : *"the Utah-based company confirmed MyDoom knocked its site*

out of commission. ... the SCO website was flooded with requests beyond its capacity ... The speed and severity of the attack surprised security officials. ... As intended, Sco.com was the only discernible victim on Sunday." So, targeted (as opposed to random) vandalism. "It was programmed to take control of unsuspecting computer users' PCs from which it would launch a debilitating denial-of-service attack on SCO Sunday." Of course, the rich guys are trying to buy a solution : "Both Microsoft and SCO have issued \$250,000 rewards for tips leading to the arrest and conviction of the author or authors ..." An AP story dated February 1st, found at TechNews.com, mentioned the familiar MS connection: "The worm spreads in e-mail attachments on computers using Microsoft Corp.'s Windows operating systems and is activated when people read their mail." Yes, well, many PC users do read their mail. So the reader might infer that the only real protection is to stop reading E-mail? Not good.

"Cyber security emergency warning" was the "Subject:" of E-mail to BPA employees on March 2nd. From Kevin Dorning, BPA's Chief Information Security Officer, this message documents failure by BPA to exclude some damaging E-mail. "The e-mails contain a virus that will run and infect your system if you comply with the directions given in the e-mail." Rather than the usual executable attachment, PKZIP would seem to be used by the vandals : "The e-mail contains an attachment that has been compressed with a passworded zip file. The recipient is instructed to open a Zipped file and enter the password given in the e-mail. DO NOT follow the instructions given. ... If you have already taken the suggested actions contact the Help Desk immediately." Yet, this seems to have been just the panicked, immediate response. The following day, the computer people once again (for an award-winning earlier case, see the April, 2000, issue) announced that incoming .ZIP files would be prohibited. A message "From : Williams, Laura E - T-DITT2" had "Subject: All inbound email attachments with 'zip files' will be blocked." This time, it sounds as though more than just files having .ZIP extensions might be excluded by this "interim security measure that is in effect related to Email-borne viruses. In response to a high level of threat to BPA systems, effective immediately, all inbound Email attachments of a type commonly known as compressed 'zip files' are being actively blocked at the network perimeter. Common 'zip files' include those with an extension of '.zip', and are generated by compression programs such as 'WinZip' or 'PKZip' etc. Currently, there is a group of viruses that take advantage of the 'zip file' format and attaches the virus payload inside a password-protected file. Inbound blocking of all such files will continue to be in place until at least next Wednesday, March 10th. There is a possibility that this measure will continue to be in place indefinitely. The BPA technical and security community is currently assessing potential long-term solutions to the problem. In the interim, if your business function requires that you receive files of this type from sources outside BPA, contact the Help Desk. The Help Desk can ensure that the files have been properly scanned for malicious content before being delivered to you."

ATP Licensing Problems

Entergy Corp., with serves New Orleans, Louisiana, and substantial surrounding countryside, no longer is licensed to use ATP materials because of EMTP commerce by another of its employees, Doug Mader. This was the unhappy notification that was sent to former user Carlos Cruz Montano in E-mail dated December 23rd. The previous day, this Entergy employee had confirmed recent suspicions : "I had no knowledge of Doug Mader's involvement in DCG until I received your email. Doug Mader confirmed that he is participating in DCG as an Entergy employee." For the record, your Editor had inquired of two Entergy employees using E-mail dated December 17th : "In E-mail dated October 7th, Laszlo Prikler, Chairman of the European user group, wrote as follows about an Entergy employee ... 'Doug Mader made the welcome speech at the beginning of that EMTP-RV seminar on Sept 28 Sunday in New Orleans. He was introduced ... as DCG EMTP Chairman.' ... We knew that Doug Mader had moved to Entergy some years ago, but we had no way of knowing that he had retained his function with DCG. ... Is this a complication for free Entergy use of ATP? We are not yet sure. We merely are investigating. ... The question would be this : as DCG Chairman, is Doug Mader acting as an Entergy employee? Alternatively, is he acting on his own, as an individual? ... Has Doug Mader promoted DCG, or otherwise been involved with DCG, while on company time (as opposed to personal time)? Beyond time, have Entergy resources been used to support DCG? In Nova Scotia, the situation was clear. Doug Mader's employer paid for many days of his time, plane tickets, lodging, and food while Mader attended DCG functions in far-away places. If Entergy has subsidized DCG activity of Doug Mader or anyone else in any significant way, no Entergy employee can use ATP free of charge. Alternatively, if Entergy has not been involved; if Doug Mader has been acting on his own, on personal time and using personal resources (including mailing to others who are involved in DCG), then Entergy employees could use ATP free of charge provided they do not disclose ATP information to Doug Mader or anyone else who has been involved with EMTP commerce."

EDF Energy in England provides a new challenge to free ATP licensing. Yes, EDF as in *Electricite de France*, which is the French national power monopoly. Laszlo Prikler first informed your Editor of the ATP licensing problem in E-mail dated January 19th. Responding to an inquiry from England, he wrote : "XP is not a problem. I see another one however: @edfenergy.com. EDF is not licensable for free ATP use." This was a message to John Archer, Senior Projects Manager of Major Projects South. Two days later, he explained : "EDF is a UK based company. I'm interested in using ATP solely as a personnel user not for company use. Please could you confirm if I will be applicable to receiving a license." Later that same day, your Editor commented upon EDF being in England : "Yes, Google rapidly pointed to your home page, which explains that 'EDF Energy is the new

name for the recently merged London Electricity and Seeboard Group of companies.' ..." About personal use, your Editor explained : "This will not help. This would be comparable to the problem of Mr. Robert Jeanjean as described in the January, April, and July, 2001, issues of our newsletters. To save re-keying, let me paste the appropriate paragraph about a need for organizational isolation from an employer that is involved in EMTP commerce. ... Note that no one is denying anyone a license to use ATP. It is only a **free** license that is in question. Specifically, for employees of a company that has engaged in EMTP commerce, there is need for organizational isolation. Note that those three universities in Montreal provided this for IREQ / Hydro-Quebec employees."

About power company Web pages, your Editor observed that the connection of EDF Energy to France was being downplayed. Your Editor could not locate the word France, and in the end, he wondered: "Is it possible that this is the way the typical multinational energy company now operates? ... I think about Pacific Power, which has headquarters here in Portland, Oregon, USA. Yet, as summarized in the October, 1999, newsletter, Pacific Power seems to have been purchased by Scottish Power of the UK. Perhaps the average PP&L customer is not aware of the connection, and perhaps the PP&L Web page obscures the connection." This seems to be the case. Google rapidly located the PP&L Web site, which had the usual "about" button. At the very end of a summary paragraph, your Editor learns that "the company merged with ScottishPower in 1999." So, merged with rather than was purchased by? This appears to involve even more spin than EDF has applied.

About possible ATP licensing of EDF Energy, your Editor wrote : "Question: in the case of a multi-national energy conglomerate, is there any greater connection among the parts in different countries than would be the case for a multi-national consulting company? Has the world changed this much? Perhaps. The question becomes relevant because we **do** make an exception in the case of large consulting companies such as Siemens of Germany. This was explained in some detail in the January, 2000, newsletter. One office of Siemens in suburban Atlanta, Georgia, USA, was denied free use of ATP whereas another was not. Clearly, this subject is complicated. It is time for me to write more about it ..."

Partial ownership confuses licensing further. This added complication was raised not long after the question about the apparent total ownership of EDF Energy by EDF (preceding paragraph). Once again, Laszlo Priklér provided the intelligence. His E-mail dated January 22nd responds to Joseph Christen of ALSTOM Schweiz AG, which is scheduled to be merged out of existence this spring : "I saw at your web site that Siemens has some 35% share in Framatome which is one out of the 5 business lines of AREVA Group. ... I saw Siemens and Framatome in the very left side of the organizational structure and AREVA T&D (Transmission & Distribution) on the very right. This schema meant for me that your

'parent' AREVA Group and Siemens has another 'child' too, called Framatom, but Siemens is not your parent and not shareholder of AREVA T&D, which is part of the AREVA Energy Division. Is this correct?" Of course, the name Siemens is like a waving red flag (see the October, 1999, issue). The following day, your Editor responded: "No question, partial ownership represents a whole new challenge. This, too, we must think about. What was clear for 100% and 0% becomes unclear at some point in between the two obvious extremes. Yet, even if the ownership were 100%, there would not necessarily be a problem for a consulting company since this would be no different than Siemens itself. I.e., the 'Siemens test' could be applied. In this sense, consulting companies are simpler than power companies ..." About size, Mr. Christen had explained : "On January 9, 2004, the AREVA Group signed the closing agreement for the final acquisition of ALSTOM's Transmission and Distribution activities. This transaction was approved by the European Commission and other anti-trust authorities. The acquisition price should be 920 million" (presumably euros) .

Power Company Politics and Religion

"The ocean really has improved" is the title of a paragraph in the October 10th edition of BPA's *Hot Issues* newsletter. Again, real scientific evidence indicates that problems of fish during the '90s might have had little to do with hydro-electric dams along the Columbia and Snake Rivers : "The Pacific Ocean off the Pacific Northwest really has been colder and better stocked with food for cold-water fish such as salmon since 1998. And, if similar events from the past repeat themselves, the sea may remain salmon-friendly a few years more. These are among the findings of ... a study by NOAA Fisheries scientists ... Coastal waters cooled several degrees in late 1998 and remained cool through the summer of 2002 ... As a result, zooplankton blossomed, coho and chinook stocks rebounded and anchovy and smelts increased." Of course, BPA continues to spend obscene amounts of money on fish, and hide the cost in the price of electricity. Once spending has started, it is difficult to stop. This is a reality of politics.

Dr. Tsu-huei Liu became Manager of Marketing Systems Software Design / Maintenance during the second half of January. Physical location is not yet much changed from what was mentioned in the April, 2003, issue (she remains on the second floor of the Dittmer Building), but she has been assigned a different and much more challenging job. The bad news for ATP continues, of course ("there might not be time for ATP work"). But this probably is the least of her worries. About Dr. Liu's new job, your Editor has begun to wonder whether it might be part of the career path for kamikazi pilots. To introduce the problem, consider what higher BPA management reported in the February 6th issue of its *Hot Issues* newsletter. There is a story entitled "IG audits automated scheduling project." Here IG indicates Inspector General, and DOE indicates the U.S. Department of Energy to which BPA belongs. In its

entirety, here is the summary of management : *"BPA concurs with conclusions. BPA's new Electricity Transaction Management System 'cannot yet meet the need for rapid, reliable and accurate electronic tagging and scheduling' transmission transactions and could use a comprehensive project plan. That's the basic conclusion of a DOE inspector general's office audit of BPA's ETMS project, released this past week. The report was expected; the IG briefed BPA executives late last month. BPA concurs with the findings. 'We recognize that we've had problems with this project and are acting to fix them,' said Chuck Meyer, TBL vice president of marketing and sales. 'We agree with the IG's recommendations -- most of which we had already identified -- and are working to solve the problems.' The ETMS is due to be completed by the first quarter of 2005 to meet requirements of the Western Electricity Coordinating Council."* For the record, Chuck Meyer is no known relation of your Editor, who can not recall ever having met or corresponded with the guy. About the summary, remember that this is spin from BPA politicians who might be rearranging lounge chairs on the deck of the tilting Titanic. Typical of advertising and disinformation, to defend itself, BPA management created a detailed MS Word document of "talking points" dated January 23rd. Dumped as MS-DOS text, this has size 20 Kbytes, so is substantial (like the problem). Although marked *"confidential until audit is released,"* this document was refuted publicly by a whistle blower known only to your Editor as MisterZ --- a person who uses E-mail address misterz@pacifier.com The alarm was very public, with copies going not only to FERC (the federal agency that regulates electric power) but to many newspapers of the region including those in Portland, Seattle, Denver, etc. Copies also were sent to the two dominant newspapers in the nation's capital. Mister Z does not mince words. His E-mail "Subject:" was *"Fraud, waste & abuse abounds with BPA management."* To be continued (suspense is an important element of newsletter success) .

Stu Cook Uses Apple Macintosh

An Apple Macintosh PC built around the new 64-bit PowerPC processor from Motorola and IBM was introduced in the October issue. Apple uses the name PowerPC G5 in its advertising. Well, the Mac G5 story now continues. Stu Cook of JUST Services in Rideau Ferry, Ontario, Canada, documented his recent acquisition in E-mail dated November 23rd : *"For about a week I have had a PowerMac G5 with 2x2GHz processors, 1.5GB of memory and 160GB HD under my desk. There is only one word for it : fast. I have downloaded the IBM XL Fortran compiler which is optimized for the G5 and this is what I intend to use. Along with OSX 10.3 (Panther) comes a software development package called Xcode which includes the gcc 3.3 compiler in case some of the access we need to the OS needs a C interface. ... Mac OSX has a Unix base with the latest FreeBSD 5 commands and libraries and the Unix portion of the OSX is known as Darwin in the open source world."* Initially, just one processor should be plenty. But once normal serial ATP execution might be perfected, it is expected that attention might turn to that

second processor. Exploitation for parallel Monte Carlo should be simple enough (see recent writing about OPMC). But what about more challenging and less obvious parallel computation? Mr. Cook wrote : *"I have also come across this product and will be getting more info on it soon."* Advertising states the following : *"CxC makes parallel computing available to scientists who only know their discipline and potentially C or Fortran languages, enabling them to develop and prototype complex scientific programs on desktop systems like the Power Mac G5. Once they get their code running, they can move the same code to use symmetric multi-processor (SMP) machines or clusters supporting Mac OS X, Unix, Linux, or Windows and realize fast results."*

396 Coupled Coils in Hong Kong

The record for virtual memory used by ATP must be held by those Chinese in Hong Kong (see October issue). Attached to E-mail dated September 8th was output file ATP667.LIS which revealed: *"Total size of LABCOM tables = 67172432 INTEGER words."* No mistake, more than 268 Mbytes are being demanded by Mingw32 ATP as created and executed under Chinese MS Windows XP. Much of this staggering amount of storage can be traced to Lists 3 and 5, which have sizes 1920K and 5000K, respectively. The story may have begun with 396 coupled coils, but data has grown since that initial obstacle was overcome. The 667 in the file name is understood to be the number of coupled coils. ATPDraw continues to be used, although the input file no longer is huge thanks to the replacement of \$INCLUDE by \$INSERT (note the importance of dynamic connection, which bypasses the input and sorting at the start of execution). That "/"-card sorting was the initial bottleneck, recall. This was what interrupted experimentation at 396 coupled branches.

User-supplied source code might bypass the data input of HIGH ORDER PI CIRCUIT (HOPC). Your Editor ended his October 23rd message to Zhao Qibin in Hong Kong as follows: *"This would avoid the input from disk, which is slow. It is inefficient to establish a disk file separately, and then read it. Much faster should be the generation of such huge data sets within ATP. ... Like that proposed user-defined source code for phasor sources, this would be another small step that could be supplied relatively quickly. One step at a time."* As your Editor observed on October 24th: *"This would be another extension to ATP. We already have TO SUPPORTING PROGRAM (see the April, 1999, newsletter) to define data internally using a supporting program. Why not also user-supplied code for this? ... Considering your volume (megabytes), there would be an enormous saving to generate data internally."* So, the concept was implemented. The CODE option of HOPC modeling is illustrated by a new 6th subcase of DC-3 beginning October 30th. This allows the user of HOPC to define data of a Pi-circuit in code rather than in a disk file. The code in question is user-supplied HOPCOD which easily could be written in any language (e.g., C) since arguments

communicate all parameters of the associated Pi-circuit. Although not yet being used, the file type easily could be exploited as a related type code to select alternatives within HOPCOD. This would be for variation of the defining function (e.g., to vary the line length). For example, a name such as CODE.287 easily could be interpreted as a request for alternative number 287.

DCG EMTP Office in Montreal

New DCG EMTP might be incompatible with the average computer today. Not only does EMTP-RV appear to be limited to Wintel, it seems limited to modern, high-end Wintel. This is deduced by clicking on the "Installation requirements" button within the "Software" menu on the left of the home page. This leads to "Optimal requirements for EMTP-RV ..." Optimal requirements? This is an oxymoron of almost stereotypical proportions. In any case, here they are: "Windows 2000, NT or XP; ... Pentium III 800 MHz CPU or better; Minimum of 256 MB of RAM; 200 MB of hard-disk space for installation ..." From the beginning (e.g., see the story entitled "EPRI EMTP using OS/2 is slow" in the January, 1991, issue), DCG / EPRI EMTP was inefficient. That tradition seems to have been kept alive by recent developers in Montreal.

Details of English language are curious. "Development and Coordination Group"? Your Editor does not remember any "and" from years past (for example, see explanation in that very first Can/Am newsletter which was dated September, 1988). Also, "Group" is singular, so a group "includes"; it does not "include" (plural). Perhaps French - speaking salesmen were at work, and the work was rushed?

Consider the transition. Electrotek Concepts once was EPRI's agent for EMTP, but it was dropped more than 7 years ago (see the story entitled "Electrotek Concepts asks for ATP" in the October, 1996, issue). At that time, Ontario Hydro (OH) seemed to be doing some DCG / EPRI program maintenance. But OH, too, was to undergo surgery. Recall the segmentation of Ontario Hydro was mentioned in the April, 1999, issue. The preceding list of DCG members seems to confirm the name of one of the pieces : Hydro One Networks. Presumably this is the transmission half or third (into how many pieces was OH split?). But it seems no longer to be doing maintenance for DCG. Who is? The "About us" button of the DCG home page leads to a description of TransEnergie Technologies. "The latest version of the DCG EMTP, called EMTP-RV, is now commercialized by TransEnergie Technologies, a member of the Hydro-Quebec group." TET works "in conjunction with IREQ ... TransEnergie Technologies is a subsidiary of Hydro-Quebec TransEnergie, the power transmission division of Hydro-Quebec ... For more information, visit our website www.transenergie-tech.com"

Typical of so many Web sites, this one for DCG

EMTP appears to your Editor to be little more than hastily-erected advertising. For example, there are 4 buttons in the center at the top of the page, and the one marked "Site Map" leads to the 2-word explanation "Coming soon". Likewise, the button marked "FAQ" leads to nothing more than an invitation : "Please forward your questions about EMTP - RV to Bahram Khodabakhchian at the following email address : khodabakhchian.bahram@hydro.qc.ca" Note that this domain name seems to belong to Hydro-Quebec, not TransEnergie. The "To Reach Us" button was useful in that it revealed a street address in downtown Montreal ("740, Notre-Dame Street West").

So what about price? In the left margin, there is a short list entitled "Software" and a link under this is "Prices". The product is not cheap : "The following table of license fees, in US dollars, is for the EMTP-RV software package. All license fees are one time payments and include maintenance / upgrades and support for the first year. After the first year, the software maintenance / upgrade and support services may be renewed on an annual basis for a cost of 20% of license fees." The "Windows individual Node-lock" has a \$6000 industrial and a \$600 educational price. For what is called "Windows concurrent" these prices rise to \$9000 and \$1000. Yet, there is a minor volume discount : "The price for the second license will be reduced by 20%, the third one by 30%, the fourth one by 40% and all additional ones by 50%. The same discount policy will be applied to maintenance / upgrades prices."

Laurent Dube seems to have been mentioned at the DCG sales pitch. On October 7th, Laszlo Prikler wrote about "... EMTP re-writing during the last 4 years at IREQ and several subcontractors also worked on this EMTP-RV project. Laurent Dube was one of those subcontractors." So, a year later, we have confirmation of speculation about why former BPA contractor and ATP developer Dube had refused to sign an ATP licensing agreement when asked to do so by Laszlo Prikler (see the April, 2003, issue). At the time, your Editor had asked : "Alternatively, did he try to bluff his way past security?" The answer would seem to be yes.

Publishing Programs and Viewers

An isolated single line at the top or bottom of a column normally is not allowed. In the past, your Editor seldom has had difficulty eliminating them. But he had big trouble at the bottom of column 1 of page 9 of the January issue. The normal technique, used successfully with MS Word 7 of Win 95, was this: move a later story ahead of the story that has the troubled line. The chances are good that this will solve the problem. If not, try a second. After all, how unlucky can one be? Well, in the case of page 9, four different stories were moved, and each time another problem was created. In 1 of the 4, a comparable problem was created. This might be about what one would expect: occasional failure. But what about the other 3? They failed

for a completely different, and quite unexpected, reason : the document was extended significantly. In one case (movement of the ATPDraw story), page 21 contained 3 lines. In another case, page 21 had 7 lines. But where do the extra lines come from? Simply changing the order of lines should not affect total manuscript length. It did not, as best your Editor can recall, using MS Word. But it certainly does using WP 10. The phenomenon is bizarre. Some extra intelligence must be built in. But why? Not understanding what was happening, your Editor simply surrendered, and left the isolated line on page 9.

An MS Excel ruler from David Francis of TransGrid in Sydney, Australia, can be found in the preceding issue. Recall speculation about the bottom line. Upon creating the PDF output, Laszlo Prikler commented as follows on December 7th : *"Horizontal lines of the input data card images in the Excel table ... are visible in the PDF file."* Later that same day, your Editor responded : Yes, *"but a much bigger problem is visible: no content. More precisely, I can see very weak lettering within columns 1 and 2: white letters on a gray background. But columns 3 onward are empty. Presumably the letters are white here, too --- white letters on a white background!"* Decades later, color remains a problem. Your Editor never ceases to be amazed. In this case, presumably the involvement of a second company (Corel, the maker of WP) presumably somehow contributed to the problem. It is difficult to interface with Bill G's software, sometimes, due to unpredictable change and / or incomplete documentation.

Speed of printing of Adobe Acrobat Reader might be a concern for ATP documentation such as the Rule Book? This would be to produce real paper if and when it is needed, using WP-produced PDF files. The first person whom your Editor can recall to have questioned the speed was Prof. Mustafa of FH Osnabrueck in Germany. Recall that, for Chapter II of the Rule Book, BPA's Dr. Tsu-huei Liu had found that newer Acrobat Reader version 5.0 was required for some tables to look correct. In E-mail dated December 12th, Prof. Kizilcay observed : *"As you explained in the January newsletter, the problem of missing border lines of tables is related to Adobe Acrobat 4.0. With version 5.0, the problem can be solved. Although the tables then look good on the screen, printing in normal mode again causes the same problem (partly missing borders). The PDF document must be printed as graphics to avoid the trouble, but then printing is significantly slower."*

Frequency Scans and Harmonics

Pisa-format .PL4 files are not yet being supported for LINE MODEL FREQUENCY SCAN (LMFS) although an improvement in treatment can be reported beginning November 25th. Orlando Hevia was the first to report a problem. His attachment to E-mail dated November 21st documented an error message following the table of the first comparison: *"Halt in BEGPLT/LU4BEG. ... does not have ... as required for Pisa-format C-like."* This was the place where batch-mode plotting is possible. Study revealed that

internal conversion from a Pisa-format .PL4 file to a conventional C-like .PL4 file was possible, so a strategy of avoidance was adopted. The associated warning message should be self-explanatory : *"Warning. LMFS does not yet support NEWPL4 = 2. LMFS11 changes to 0 to allow execution to continue."* If present, this will appear between the first and the second frequencies of the initial frequency scan (which is for the zero sequence test). Later, the alternative of Pisa format might be honored for LMFS data. But not yet. Not in the absence of practical use. Who needs it, and why? Since the Pisa-format option dates to early 1999, and the first complaint was registered late in 2003, it appears that use presently lies in the range of nonexistent to rare. In what practical sense would Pisa format be better than convention C-like for the .PL4 file of LMFS?

Miscellaneous Intel PC Information

Linux is under legal assault by SCO. Because IBM currently is the biggest Linux supporter (see preceding issue), and has the deepest pockets, IBM seems to be the primary defendant. *"Judge wants more evidence in IBM case"* is the title of an *Associated Press* story that was found at the Web site of the *New York Times*. Dated December 9th and filed from Salt Lake City, this story summarizes what promises to be a long legal struggle: *"A federal judge has ordered the SCO Group to produce evidence supporting its claim that International Business Machines Corp. violated a license agreement by giving away the Utah company's code for use in the Linux operating system."* The judge ordered SCO *"to show where and how IBM's Linux contributions misappropriated SCO's proprietary Unix code. SCO is seeking up to \$50 billion in damages in the lawsuit, which was filed in March."* End users **are** affected : *"If SCO succeeds, Linux users could be held liable ... SCO has said it will target Linux users and is already trying to collect licensing fees ..."* Of course, Unix came from AT&T. So why now SCO? Unix *"was developed in the late 1960s and early 1970s by AT&T. SCO's predecessor company, Santa Cruz Operation, acquired the rights in 1995."*

A new Intel Fortran compiler is available for Windows or Linux as first reported by Laszlo Prikler. In E-mail dated January 7th, he provided context : *"Last year I purchased Compaq Visual Fortran 6 for a project ... I still have no time to open the CD envelope, so I do not have experience of my own. But ... I regularly receive upgrade notifications ... Maybe you will find some useful information."* Yes, the attached E-mail from Polyhedron Software in the UK was of interest to both your Editor and Orlando Hevia in Argentina. First, the matter of newness : *"The new Intel Visual Fortran 8.0 finally merges the Intel and Compaq compiler lines, by grafting the Compaq (formerly Digital Equipment) front-end on to the Intel code generator. It is the recommended upgrade path for both Intel and Compaq compilers lines ..."* So, not really new. In any case, what about the old? Laszlo Prikler had mentioned: *"As I recall, Orlando did some tests with the Intel Fortran last year."* Orlando Hevia responded: *"Yes, but the tests were very frustrating. ... a big (more than 12 MBytes) file of shared libraries is necessary to run the*

programs, too." Your Editor was neither impressed nor anxious to purchase : *"Once again, none of this modern software looks attractive to me. Pressure to sell more quickly has led to unbelievable inefficiencies. My most recent illustration has been WP 10. As I have opined, WP 10 is worth about the \$20 that I paid for it. I can not imagine anyone paying the commercial price of about \$300. If the Intel compiler costs \$600, it might be worth 60 (rule of thumb: remove one zero)." This is only partially a joke. About changing from free gnu : "There would need to be a reason to convert. The only reason I can imagine is good auto-parallelization, and I see no evidence thus far. Let's think, probably John Schaad of BPA would purchase the upgrade, so if we really are curious, we probably should collaborate with him."*

"Any software just for 15\$ - 99\$" is the intriguing "Subject:" of E-mail that is received at BPA from time to time. Yes, this is spam, and the "any" probably does not mean any software that the customer wants. But prices are attractive. To illustrate, consider the November 29th message from roawenseh@excite.com which begins : "If you don't have enough money to buy needed software or think desired software isn't worth the price, then this service is right for you. ... Order any software you need for a low price. Some popular products from our price list: All programs you can download or order on cd-rom by airmail. 30\$ Adobe PhotoShop CS 8.0 (1 cd) ... 35\$ AutoCAD 2004 ... 55\$ Microsoft Office 2003 System Professional (5 cds) ... 35\$ Microsoft Windows XP Professional ... and, more, more, more!! Total today is 1418 products. price list - <http://141.85.12.38/p/> search - <http://141.85.12.38/e/>"

Can this possibly be legitimate? Could this be a case where goods are being sold second hand at fire-sale prices?

Miscellaneous Small Items

Overflow of List 12 was mistakenly being reported as overflow of List 11 prior to a correction to OVER4 on November 30th. This had nearby S.N. equal to 3433. Why no one reported the error years ago is not known (this late discovery seems strange) .

A French-language editor FRENCH.FTN was the creation of your Editor toward the end of the year as he awaited the return of Dr. Liu (who then was burning off an accumulation of excess vacation time) . In order that important details not be forgotten, and can be referenced later, the project will be summarized here. Salford DBOS was used, and is involved heavily for six reasons : 1) Near-infinite dimensioning such as CHARACTER*1 STRING (1000000) ; 2) EQUIVALENCE of this to an INTEGER*1 vector to provide direct access to character codes of the bytes; 3) Use of parameters of execution (to pass in a disk file name) ; 4) C-like input of a disk file using OPENRW@ and READF@; 5) use of CALL GET_KEY1@ to see if a key has been pressed (and return the associated value if it has); and 6) Use of

COUA and SET_CURSOR_POS@ to manage changes to the line being edited at the bottom of the screen. Operation is conceptually simple. Function keys are used to apply an accent to the last-keyed character. As a result, all English keys remain unchanged. Recall this big complaint of your Editor at the 1990 LEC annual meeting in Leuven : the imperfectly-qwerty Belgian keyboard (in Leuven, used mainly for Dutch) conflicted with several English characters as mentioned in the October, 1990, issue. Well, your Editor's new editor has no such problem. Yes, an extra keystroke is required for each accent, but this is believed to be a small price to pay for the simplicity of remembrance and use. To be continued.

GIC (Geomagnetically Induced Current) was mentioned in the January, 1999, issue. Recall this was to be a specialty of John Kappenman in Duluth, Minnesota, who then had moved from Minnesota Power to Metatech Corp. The subject has arisen again. On January 25th, Prof. Chul-Hwan Kim, Chairman of the South Korean user group KEUG, asked about *"the possibility of simulation using EMTP / ATP ."* Two days later, your Editor responded with some skepticism: *"As with lightning, the user must postulate the excitation. Beyond that, I am aware of no problem. My recollection is that excitation is dc (i.e., a constant). ... But once again, note the problem of proprietary data. If Metatech knows how to simulate GIC using ATP, how likely is it that Metatech would disclose details to the general public? There is some similarity to G.E. Schenectady and SSR simulation prior to 1975 (when S.M. modeling first became available in EMTP). Then, in the later '70s, G.E. produced a shaft system that involved more than 10 masses (for a while, EMTP had this limit). The guys with the data and the ability to use it (in G.E. MANTRAP) clearly were not encouraging EMTP simulation of SSR by others. I have no reason to believe that solar-induced effects are any different."* There also was a request for *"an example for transformer concerning GIC."* Your Editor was even more skeptical: *"If you read newsletters, you already know that detailed data to model transformers is not readily available. This is what made those 3-phase models from Fargo (Prof. Stuehm) and Seattle (Prof. Chen) impractical. You can read my summary conclusion in the July, 1993, issue."* Anyway, a copy was sent to that AOL mailbox of John Kappenman, who responded quickly and helpfully : *"Please find attached a recent paper I have authored on the subject and also the prefiled testimony I provided to Congress (US House Science Committee) from October 30, 2003. This provides an up to date summary of geomagnetic storm threats to modern day power grids. This work estimates that severe geomagnetic storm conditions could readily cause a larger region of power system collapse and blackout in the US than what was experienced even in the recent August 14, 2003 event."* The attached papers are being saved at BPA as follows within c:\wp51 :

10/15/2003 09:40a 720,486 kappenm1.PDF
12/30/2003 01:31p 1,796,659 kappenm2.PDF

The second of these is Mr. Kappenman's congressional testimony. A PDF-format file of 19 pages, it has title *"The vulnerability of the US electric power grid to space*

weather and the role of space weather forecasting" Carefully written and illustrated, this is interesting, but largely non-technical. For engineers, the 28-page first paper probably is more useful. It is entitled "*Chapter XX: space weather and the vulnerability of electric power grids.*" This ends with 25 references of which the first is authored by two old friends : Johan Van Baalen of Belgium (a graduate student along with your Editor at the University of Minnesota during the late '60s) and Vernon Albertson (our common faculty advisor) . For their historic paper, see "*Electric and magnetic fields at the earth's surface due to auroral currents,*" IEEE Trans., vol. PAS-89, 1970. But the real question is this : is EMTP-like simulation practical considering the extremely slow and highly-speculative excitation? Your Editor is skeptical. Mr. Kappenman does not explicitly state that EMTP simulation is practical.

"*The Leader Development Method*" of IEEE has been the subject of considerable communication with Tom Field of Alabama Power Company in Birmingham. In list server mail dated January 25th, Mr. Field wrote: "*Gabor is probably correct in his response. However, this is one of the things that the IEEE WG 3.4.16 on separation distance will be modeling with validations. The modeling will be in ATP. Currently, we are working on the waveshape to use, but you can see an outline of the project and the lightning study components that will be thoroughly discussed by the group with documentation, modeled with ATP, and validated. These components include the leader development model. Perhaps you may be interested in working with us on this. It sounds like your interest in developing models using MODELS for lightning studies would be welcomed by the group. We are using a new tool from the IEEE to perform our work called the IEEE Power & Energy Virtual Community that will allow anyone to see and participate in what we are doing. If documents are covered by copyright, they are not viewable (except by working group members), but all other discussions and documents are. We allow corresponding members, so if you would like to participate and cannot make it to the meetings, you can be accommodated with this method. ... If you are interested, you can join the website by going to ... www.ieee.comunities.org/power Once you are in the site, click on Discussions on the left, then select Standards, then select Surge Protection, then select IEEE WG members, then select HV Subcommittee, then select WG 3.4.16. You should find a lot of references in the discussions on the waveshape, the outline of the project, information about the research projects recently approved for the validation, and a program for the separation distance calculation in the standard that will be validated or adjusted when the model is verified. We were using the voting method of the website, but, since this is new, we are waiting on the IEEE legal staff to rule on what we are doing with voting before we continue with voting on the website (there is a note there about it). When we get to the leader progression model, there will be a lot of information about it on the website (however, the papers will probably have a copyright). I do not know how much will be written in MODELS and how much will be in*

TACS, but you certainly are welcome to participate and play a role in developing the model components. We do have research projects approved for validation, so this would be a good opportunity to develop good models."

Dr. Kalyan K. Sen is a power electronics expert who recently has been heard from in creative and promising fashion. Dr. Sen becomes important to ATP users today because he lectures widely, and seems to be working on a book that might support and illustrate ATP simulation. About history, newsletter readers may remember the recommendation of three papers by Dr. Sen. UPFC was emphasized in a paragraph in the April, 2002, issue. Today, E-mail dated December 12th documents an important change of employer and preoccupation : "*Once when I was a part of Westinghouse, I wrote 3 papers on modern FACTS controllers such as STATCOM, SSSC, and UPFC.*" But the present message came from Curtiss-Wright, and Dr. Sen explained that "*for the last couple of years I have been traveling to many countries and giving seminars as an IEEE distinguished lecturer. I plan to make similar trips next year for giving hands-on training on how to model FACTS controllers preferably using ATP. In that case, I shall ask the host university, say in India or China, to have ATP available on their end. I shall make sure the files, which I have created over the years, run on ATP before I make the trip. I shall lecture on fundamentals of FACTS controllers and how to model them. For your reference, I am attaching my 3 papers with this e-mail.*" So far, this is easy and obvious. But the proposed book becomes more complicated. Whereas Dr. Sen's initial thought was to publish ATP data, your Editor argued against this in a message dated December 16th : "*Source code? Maybe you mean what we would call program data. Sometimes there are concerns about the disclosure of data, as past writing about Prof. Ned Mohan's 'Computer Exercises ...' book has explained. ... Yes, the October, 2001, issue has a long paragraph about Zenji Research and Development Corp. in Yokohama, Japan. There was concern about these people disclosing ATP data to unlicensed persons. I explained how Prof. Mohan avoided the problem*" by making his data universal. Your Editor went on to explain that Dr. Sen might be able to do the same thing. But why even try? "*Why publish program data with the book? Why not instead make data available through user groups? After all, the data could not be used without the program, and the program is available from user groups. Why not make your data available through user groups (primarily Europe and Japan, which maintain storage on the Internet)? Well, one answer might be that you want to sell the data. User groups would not help you with this. If you bundled the data with the book, the book might have greater value, so might sell better. This is what Prof. Mohan did. Prof. Mohan's book (the paper copy) had some value in its own right, but the accompanying floppy disk was what many users probably wanted most. If Mohan had turned his data over to user groups, no doubt his book sales would have suffered. Your situation might be similar, but it is not obvious. Your book probably would have a lot of good text (Mohan's 'Exercises' book had almost none).*" To be continued.